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United States Senate

WASHINGTON, DC 20510

COMMITTEES:
COMMERCE, SCIENCE, AND TRANSPORTATION
ENVIRONMENT AND PUBLIC WORKS
INDIAN AFFAIRS
RULES AND ADMINISTRATION

May 15, 2009

The Honorable Daniel Inouye
Chairman, Subcommittee on Defense
Chairman,
Senate Appropriations Committee
119 Dirksen Senate Office Building
Washington, DC 20510

The Honorable Thad Cochran
Ranking Member, Subcommittee on Defense
Ranking Member,
Senate Appropriations Committee
119 Dirksen Senate Office Building
Washington, DC 20510

Dear Chairman Inouye and Ranking Member Cochran:

As the Subcommittee begins its consideration of the Fiscal Year 2010 (FY10) Defense Appropriations bill, I am writing to request support for the following programs:

Item Name: New Mexico National Guard Counterdrug Support Program
Request: $6,000,000
Account: National Guard Personnel, Army
Line:
PE:
Suggested Recipient: New Mexico Army National Guard
Suggested Location: Santa Fe, NM
Purpose: This project will support the Guard's ability to conduct counterdrug activities in conjunction with by U.S. Customs and Border Protection, the Drug Enforcement Agency, the Federal Bureau of Investigation, local law enforcement, and HIDTA Task Forces. With the ongoing drug-related violence in Mexico and the need to increase resources aimed at interdicting the flow of drugs, weapons, and bulk currency being smuggled over the border, the Guard's counterdrug assistance is more important than ever. The Guard's current counterdrug duties include camera surveillance of high traffic border areas, mobile vehicle inspection and dismantlement, vehicle barrier construction, and at-risk school counterdrug education programs.

Item Name: Define Renewable Energy Sources for Base Energy Independence
Request: $2,000,000
Account: RDT&E, Army
Line: 128
PE: 0605602A
Suggested Recipient: White Sands Missile Range
Suggested Location: White Sands Missile Range, NM
Purpose: To develop plans for the environmental, site and other assessments needed to pursue alternative energy generation and storage options at White Sands Missile Range. Energy sources for study include: solar, nuclear, geothermal, green fuel (algae). Developing the ability to store large amounts of energy will enhance the range's ability to support a wider variety of tests involving Direct Energy and other evolving technologies.

Item: Algal Biofuels for Aviation
Request: $4,000,000
Account: RDT&E, Air Force
Line: 22

STATE OFFICES:

ALBUQUERQUE PLAZA
201 3RD ST. NW, SUITE 710
ALBUQUERQUE, NM 87102
505-346-6791

LORETTO TOWN CENTER
505 SOUTH MAIN, SUITE 118
LAS CRUCES, NM 88001
575-526-5475

SANTA FE
120 SOUTH FEDERAL PLACE,
SUITE 302
SANTA FE, NM 87501
505-988-6511

PE: 0603216F
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: This project targets biofuels production from algal biomass as an alternative source of fuel for aviation. Between 2.5 and 3 percent of the Department of Defense (DOD) budget is spent on fuels, with more than 60 percent of the fuels used for aviation. Moving toward an alternative source of fuel for aviation would address sustainability, environmental impacts, economic dependence and energy security related to our military and our national security.

Item: Playas Training and Research Center National Guard Joint Training Experiment
Request: $8,000,000
Account: RDT&E, Defense-Wide
Line: 167
PE: 0804767D87Z
Suggested Recipient: New Mexico Institute of Mining and Technology (New Mexico Tech)
Suggested Location: Socorro, NM
Purpose: The Playas Training and Research Center (PTRC) environment contains an extremely large and complex urban/suburban terrain, complicated infrastructures, industrial fixtures, and rural maneuver space that has the capability to reproduce disasters and weapons of mass destruction (WMDs) scenarios with a high degree of realism. This funding would establish PTRC as a Joint National Training and Experimentation Site for the National Guard Bureau (NGB), particularly for mission training areas of joint operations between services as well as intergovernmental agencies, irregular warfare, new and emerging missions, emergency management and civil affairs and peacekeeping missions.

Item: New Mexico University Strategic Partnerships
Request: $5,000,000
Account: RDT&E, Defense-Wide
Line: 1
PE: 060100BR
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: The program seeds projects at universities in cooperation with divisions throughout the Defense Threat Reduction Agency (DTRA). DTRA is pursuing several strategic research and development campaigns critical to national security that foster numerous opportunities for initiatives in biotechnology, materials sciences, situational awareness, infectious diseases, radiation detection, and medical sciences. The program engages faculty and students toward first-hand research on national security issues that ultimately benefits DTRA's mission.

Item: High Energy Conventional Energetics (HECE) Program (Phase III)
Request: $6,000,000
Account: RDT&E, Navy
Line: 4
PE: 0602114N
Suggested Recipient: Applied Research Associates
Suggested Location: Albuquerque, NM
Purpose: The program completes development of enabling technologies required to produce sufficient energy to defeat mobile chemical and biological weapons of mass destruction (WMDs) in hard and deeply buried targets with no collateral damage. The primary benefit of this program is the potential to provide the nation with the ability to defeat or neutralize chemical or biological WMDs with conventional weapons, rather than radiological or nuclear weapons, and to do so with no subsequent release of the chemical or biological agents within the WMDs. Both Phases I and II were funded for this program.

Item: Holloman High Speed Test Track

Request: $4,800,000
Account: RDT&E, Air Force
Line: 101
PE: 0604759F
Suggested Recipient: General Atomics
Suggested Location: Holloman Air Force Base, NM
Purpose: The project will continue technology development that allows for the implementation of a levitated, vibration-free test on the ground at a significantly reduced cost. Magnetic levitation is utilized to provide a smooth test environment and has been demonstrated in earlier tests to provide the necessary capability. This test capability, when completed, will make land based testing of critical missile and aviation subsystems and components affordable and will significantly reduce the cost of flight testing as well as improving the system reliability. This test capability is unique to the mission of the US Air Force, but the capability can support the Missile Defense Agency as well as other DoD agencies.

Item: Phase II, Regional Partnership
Request: $4,700,000
Account: RDT&E, Army
Line: 128
PE: 0605602A
Suggested Recipient: White Sands Missile Range
Suggested Location: White Sands Missile Range, NM
Purpose: This funding, directed toward White Sands Missile Range (WSMR), Ft. Bliss and Holloman Air Force Base (HAFB), will provide essential tools to facilitate scheduling, coordinate de-conflication of air, land and frequency assets, and coordinate real-time test and training missions. The existing Regional Partnership between the three military installations was established to more effectively and efficiently manage the region's land, air and frequency domains in anticipation of the substantial growth in operational tempo for the area.

Item Name: UAV Systems and Operations Validation Program
Request: $2,900,000
Account: RDT&E, Defense-Wide
Line: 129
PE: 0604940D
Language: N/A
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: This project will address a major shortfall of the existing Department of Defense (DOD) knowledge base of the expertise and technology focused on small- to mid-sized Unmanned Aerial Vehicles (UAVs). The recent proliferation of small to medium UAVs within the various DOD services and commands emphasizes the need for systematic and consistent data sets to support decision makers. Critical needs for small- to mid-sized UAVs to be addressed by this project include reliability, standards, interoperability, airspace integration, communication links, maintenance standards, training, operator certification, and multiple airworthiness issues.

Item: High Energy Laser System Test Facility (HELSTF)
Request: $6,000,000
Account: RDT&E, Army
Line: 130
PE: 0605605A
Suggested Recipient: Northrop Grumman Corporation
Suggested Location: White Sands Missile Range, NM
Purpose: The High Energy Laser System Test Facility (HELSTF) at White Sands Missile Range (WSMR) has been used for over fifteen years to conduct live-fire experiments using high energy lasers to

engage and defeat numerous flying targets. The funding will provide for a refurbishing of the Tactical High Energy Laser (THEL) subsystem to accommodate a solid state laser, for a test qualification live-fire, and would ensure that other users with late-emerging high energy laser test and evaluation needs vital to national security will be able to utilize the facility. Areas of research include rocket, artillery and mortar as well as unmanned aerial vehicle threats.

Item: TOW LBS
Request: $5,000,000
Account: RDT&E, Army
Line: 155
PE: 0203802A
Suggested Recipient: Raytheon Company
Suggested Location: Farmington, NM
Purpose: The project will provide for studies to analyze and mature the technologies necessary to modernize TOW, consistent with the Amy's requirements for incremental improvement of the missile system. Three technology areas will be developed in parallel to support flight demonstration and qualification: airframe design/fabrication, rocket motor development, and launcher modifications. TOW is the only joint (US Army/USMC) multi-mission precision heavy assault/anti-armor weapon system currently fielded. The United States has more than 6000 TOW launchers in inventory with about 600 TOW missiles in each Infantry Brigade Combat Team. The TOW weapon system is currently being used effectively in Iraq and Afghanistan for long-range precision engagements and more than 10,000 missiles have been fired in these theaters. An industry-funded initiative has confirmed the value of a launch, boost, sustain motor which would extend range and reduce time to target by six to eight seconds, enhancing gunner survivability. Incremental improvements of TOW are critical if the system is to keep ahead of threats and exceed the capabilities of foreign systems.

Item: Smart Instrument Development for the Magdalena Ridge Observatory (MRO)
Request: $9,000,000
Account: RDT&E, Navy
Line: 15
PE: 0603114N
Suggested Recipient: New Mexico Institute of Mining and Technology (New Mexico Tech)
Suggested Location: Socorro, NM
Purpose: This project is a unique teaming arrangement to build a state-of-the-art observatory with a 2.4 meter telescope and a multi-telescope interferometer that will make it a test bed for numerous astronomical and Department of Defense (DOD) projects and will enhance the capabilities of the existing observatory, particularly in the area of Space Situational Awareness. The existing facility is currently being used to support the DOD in applications including sensor development and testing, space weather monitoring and the rapid tracking of Low-Earth Orbit (LEO) objects and debris. This project will result in the most comprehensive images of astronomical and man-made objects yet available.

Item: Partnerships for Emerging Energy Technologies (PEET)
Request: $3,000,000
Account: RDT&E, Air Force
Line: 7
PE: 0602102F
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: National energy security will increasingly depend on deployment of new energy technologies. Because of the concentration of materials research targeted to energy applications, PEET is uniquely positioned to contribute to several critical technologies for energy conversion, storage, and power generation. PEET builds on the culture of interdependence of the critical national needs in strategic defense technologies and energy security. Bringing this culture to the field of emerging energy

technologies will allow this partnership to coordinate the research missions relevant to DOE and energy security issues important to the DOD. Furthermore, this will be accomplished while building the diverse workforce of the 21st century. Few state initiatives in energy are positioned to accomplish these essential goals.

Item: Heavy Metals Total Life-Cycle Initiative
Request: $2,000,000
Account: RDT&E, Army
Line: 17
PE: 0602624A
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: Knowledge gained from this program will be applied to develop mitigation techniques and technologies for the sustainability of DOD test ranges and facilities, and to determine how expenditures associated with sustainability affect final ammunition costs. It is in the best interest of our military troops to have the best ammunition available, which this task proposes to assist in identifying. At the same time, the federal government needs to have the best mitigation techniques and technologies at hand for the sustainability of DOD test ranges and for the battlefield. The continued research of the Heavy Metal Total Life-Cycle within our military is critical to a comprehensive understanding of the fate and transport of the heavy metals tested in national proving grounds and deployed in the battlefield, and consequently the environmental and health risk they pose; their economic soundness; and ultimately, the best interest of our troops.

Item: Native American Document Conversion Program (NADCP)
Request: $10,000,000
Account: Other Procurement, Navy
Line:
PE:
Suggested Recipient: Intertribal Information Technology Company, LLC
Suggested Location: Albuquerque, NM
Purpose: This project improves the efficiency of the war fighters in the field, promotes military readiness and safety, insures against the loss of valuable research and other information presently maintained in a cumbersome paper format through the conversion of military data to highly useful electronic form for DOD efficiency with troops on the ground, and minimized document storage requirements for vehicles, aircraft and buildings. Currently, U.S. military technical data is available in a plethora of electronic formats or in many instances only in paper. Continuing the integration of these formats into a single data format is important to drastically increase efficiency and inter-service communication.

Item: High Power Microwave Narrow Band Threat Systems
Request: $5,000,000
Account: RDT&E, Defense-Wide
Line: 129
PE: 0604940D8Z
Suggested Recipient: Ktech Corp.
Suggested Location: Albuquerque, NM
Purpose: The High Power Microwave (HPM) Narrow Band Threat Systems (NTBS) provides test ranges with a highly flexible tool to assess weapon system susceptibility over a range of frequencies, varying pulse repetition rates, pulse widths, energy on target, and other parameters of narrowband HPM emission. This capability is being developed in response to several high-priority shortfalls identified by the 2004 DETEC Tri-Service Study, which developed, scoped, and prioritized directed energy (DE) test and evaluation (T&E) infrastructure shortfalls.

Item: Microgrid Pilot Demonstration
Request: $6,000,000
Account: RDT&E, Defense-Wide
Line: 34
PE: 0603648D8Z
Suggested Recipient: Honeywell International
Suggested Location: Albuquerque, NM
Purpose: The project will demonstrate a standalone Micro Grid that manages, distributes, and prioritizes power at remote sites. When integrated with energy demand reduction activities (such as spray foam insulation in temporary structures) the Micro Grid can reduce the energy footprint of a remote site by more than 50 percent. It will also reduce fuel, maintenance and transportation requirements. Temporary structure insulation, intelligent Forward Operating Bases (FOB) power management, renewable energy use, and power storage/generation are key components of integrated energy reduction systems for remote sites. The military is actively developing ways to reduce the immense and burdensome energy footprint required of combat operations. Millions of gallons of diesel fuel are required to power FOB and fuel transport during combat operations, placing servicemen and women at great risk. Forward deployed commanders are currently dependent on an inefficient point power generation system to run their FOBs. The expeditionary nature of the U.S. military requires a reduced logistics tail in all contingencies.

Item: Advanced Modular Avionics
Request: $4,800,000
Account: RDT&E, Air Force
Line: 12
PE: 0602601F
Suggested Recipient: Goodrich Aerospace
Suggested Location: Albuquerque, NM
Purpose: The Advanced Modular Avionics for Operationally Responsive Space (ORS) program will develop a common avionics system for disparate ORS payloads to enable a plug and play functionality that will direct the Air Force to its operational need to be able to launch satellites on demand for a variety of missions such as intelligence, surveillance and reconnaissance (ISR), global positioning systems (GPS), and communications. The developed system will enable rapid integration of new technologies by utilizing a common interface, simplified thermal design and fine grain programmability for avionics related spacecraft hardware.

Item: Biomass to Liquid (BTL) Using Synthetic Enzymes Phase II
Request: $4,000,000
Account: RDT&E, Army
Line: 3
PE: 0603734A
Suggested Recipient: Incitor, LLC
Suggested Location: Albuquerque, NM
Purpose: This project will provide a cost-effective method to produce cellulosic-derived fuels in support of national energy surety goals. Development of these synthetic enzymes is the first step toward viable fuels production using readily available military waste products, including cellulosic C5 and C6 sugars, as well as bio-oil based materials, which existing production methods cannot efficiently convert to fuel. Use at forward operating locations to produce fuels on-site will reduce dependence on outside sources, avoiding the associated logistics costs and the risks incurred by our soldiers during shipment.

Item: Deployable Joint Command and Control (DJC2) Shelter Upgrade Program
Request: $4,000,000
Account: Other Procurement, Navy
Line:

PE:
Suggested Recipient: Alaska Structures
Suggested Location: Las Cruces, NM
Purpose: The project provides a standardized, integrated, rapidly deployable, modular, scalable, and reconfigurable Joint Operations Command (JOC) system to combatant commanders throughout the world. The DJC2 Shelter Upgrade Program will provide shelters, generators and environmental control units designed specifically for rapid deployment, improved transportability and operational efficiency as the physical backbone of the system provided to combatant commanders. The shelters will allow the warfighters to go farther and faster into the field to complete their C2 missions.

Item: EDIT Technology for Irregular Warfare
Request: $4,050,000
Account: RDT&E, Defense-Wide
Line: 27
PE: 0603122D8Z
Suggested Recipient: Stolar Research Corporation
Suggested Location: Raton, NM
Purpose: An innovative method to suppress the primary electromagnetic wave allows a deeper detection range to be achieved with the Electromagnetic Detection and Imaging Transceiver (EDIT) technology that has been proven successful in detecting and confirming the existence of metallic and non-metallic landmines and unexploded ordnance at much shallower depths. The EDIT Program involves advanced development and field-testing of modified EDIT hardware and will integrate advanced capability in the form of deeper detection range in the highly portable, hand-carried EDIT detector's performance, image processing, and user interface. Modern (i.e., irregular) warfare requires technology that can detect tunnels and caches being used by insurgents for various purposes. Adversaries are regularly negating U.S. conventional warfare strengths through the use of unconventional means. Better tools and methods are needed to fight the enemy on his turf and for urban clearance, that is, tunnels and caches that are used for sanctuary (i.e., safe-havens and operations) and enterprise (i.e., logistics and storage) purposes.

Item: High Energy Density Capacitors
Request: $6,000,000
Account: RDT&E, Navy
Line: 4
PE: 0602114N
Suggested Recipient: TPL, Inc.
Suggested Location: Albuquerque, NM
Purpose: The proposed program will provide funds for an engineering development program for a new generation of capacitors, specifically in support of DOD's Electromagnetic Gun programs. Supporting efforts in manufacturing technology and materials improvements will also be conducted. The Department of Defense, with its transformation to electromagnetic (EM) weapon systems, has a need for high voltage capacitors with significantly improved electrical energy storage capabilities. The first generation of this new material system has demonstrated a three-fold improvement in energy density storage, while material improvements suggest additional gains are feasible. Such a capacitor capability is critical to the deployment viability of EM Weapon systems. Existing capabilities are grossly inefficient because of the large volume requirements for capacitors which adversely affect weapons application. A critical need exists for this new capacitor technology, one capable of storing electrical energy at much higher energy densities.

Item: RC-26B Modernization
Request: $9,130,000
Account: Aircraft Procurement, Air Force
Line:
PE:

Suggested Recipient: Alliant Techsystems, Inc.
Suggested Location: Fort Worth, TX
Purpose: The funding will provide for continued modernization and uniformity of the RC-26B aircraft operated by the Air National Guard (ANG) to better meet its counter-narcotics, border protection, and search-and-rescue mission objectives. The RC-26B performs critical intelligence, surveillance and reconnaissance (ISR) missions in support of national disaster response by the ANG, border protection and immigration control for the Department of Homeland Security (DHS), and deployed special operations forces in support of Special Operations Command (SOCOM). Right now, six RC-26B aircraft are performing expanded deployed missions in support of SOCOM operations for an undetermined amount of time. The remaining five stateside aircraft are being rotated among the eleven RC-26B operating sites as required by Homeland Security missions.

Item: Laser Weapon System – Power Conversion Integration (LaWS-PCI)
Request: $6,000,000
Account: RDT&E, Navy
Line: 15
PE: 0603114N
Suggested Recipient: L-3 Communications
Suggested Location: Albuquerque, NM
Purpose: The project will provide increased engagement time and range for defense against anti-ship missiles, swarm attack and small munitions attack for the US Navy's surface fleet. The current gap in force protection due to the capabilities of standard munitions does not full ensure the safety of our deployed forces. The fielding of this technology solution will provide the warfighter with speed-of-light response for point defense and high-value asset protection for land and sea-based service. The eventual product will provide the warfighter with both an offensive and defensive weapon capable of protecting critical US and coalition resources by interdicting and/or destroying adversary targets.

Item: Cyber-Consequence Assessment Simulation Technologies (Cyber-CAST)
Request: $3,000,000
Account: RDT&E, Defense-Wide
Line: 25
PE: 0603122D8Z
Suggested Recipient: Referentia Systems Incorporated
Suggested Location: Santa Fe, NM
Purpose: The proposed project will leverage the accumulated knowledge and systems from the bio threat area to design and develop threat risk assessment and consequence management capabilities. Epidemiological prediction technologies will be assessed as the foundation for cyber attack modeling and simulation capabilities. Cyber attacks are the most asymmetric of threats facing our nation today. This vulnerability is especially troubling in the military cyber realm because of our limited successes in effectively managing our growing infrastructure complexity and addressing known resolvable cyber security issues. There is currently no capability to rank consequences against mitigation costs, particularly for high-impact but rare events, meaning the nation's armed services will be reacting to cyber attacks instead of planning for future events.

Item: Counter-Electronics High Power Microwave Advanced Missile Project (CHAMP)
Request: $6,000,000
Account: RDT&E, Air Force
Line: 29
PE: 0603605F
Suggested Recipient: Ktech, Corp.
Suggested Location: Albuquerque, NM

Purpose: The objective of the present effort is to develop, demonstrate and assess a multi-shot, multi-target aerial High Power Microwave (HPM) platform that is capable of degrading or damaging electronic systems. The project will produce five aerial platforms that satisfy flight safety, delivery aircraft integration, and military flight requirements. Combatant commanders need additional military options to defeat high value adversary electronic systems critical to military, industrial, and civil infrastructure. One requirement expressed is to develop a cost effective, low collateral damage weapon system to disable or damage electronic systems. Based on the limitations of conventional force options, a multi-shot, multi-target aerial platform that will disrupt, or damage electronic systems may play a key role in future conflicts.

Item: Feasibility Study for the Concept of Accelerator-Based Neutron Production
Request: $2,500,000
Account: RDT&E, Army
Line: 128
PE: 0605602A
Suggested Recipient: New Mexico Institute of Mining and Technology (NM Tech)
Suggested Location: Socorro, NM
Purpose: The study is a science and engineering effort that requires the development and evaluation of various concepts for using high-energy, accelerator-based technology to produce intense neutron radiation environments suitable for performing nuclear survivability related tests and assessments. Nuclear susceptibility/survivability tests and evaluations normally involve the exposure of military equipment to nuclear weapons environments that are composed of neutron radiation, prompt gamma radiation, total gamma dose, electromagnetic pulse, thermal radiation, and air blast, all of which require extensive and costly security, storage and inspections of special nuclear materials (SNM). Providing an accelerator-based neutron radiation environment as an alternative would potentially save millions in security costs as it would make SNM use virtually unnecessary.

Item: Mobile Command, Control and Communication (MC3) Shelter
Request: $3,000,000
Account: RDT&E, Defense-Wide
Line: 167
PE: 0804767D8Z
Suggested Recipient: New Mexico Institute of Mining and Technology (NM Tech)
Suggested Location: Socorro, NM
Purpose: The MC3 is a multi-function asset capable of supporting command/control, training, and RDT&E activities from remote sites for both Department of Defense and Homeland Security needs. Additionally, it can function as a command center for natural disasters such as earthquakes, floods, forest fires, hurricanes, etc, and man-made disasters such as accidental or intentional fires at chemical plants and refineries, major rail derailments, hazardous material spills, nuclear power plant accidents, etc.

Item: Computational Analysis of Cyber-Terrorism against the U.S. (CACTUS)
Request: $5,000,000
Account: RDT&E, Army
Line: 128
PE: 0605602A
Suggested Recipient: New Mexico Institute of Mining and Technology (NM Tech)
Suggested Location: Socorro, NM
Purpose: To counter the widespread use of advanced digital technologies that facilitate adversaries to better plan and execute attacks on civilian personnel and key national critical targets. One of the main goals of this effort is to develop a distributed, multi-agent system for real-time monitoring of selected English and foreign-language websites, enabling operators to perform near real-time analyses to gain critical knowledge, to learn the topology of networks, to detect hidden nodes in networks, and to understand adversarial threat, intent, and capabilities. A key capability of this proposed system is its

ability to handle data from myriad sources. The proposed system is language independent and has the capability to detect malware, steganography, and other forms of stealthy communications.

Item: Inland Water Quality and Desalination Program
Request: $9,000,000
Account: RDT&E, Navy
Line: 14
PE: 0602782N
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: The Institute for Energy and the Environment (IEE) and the New Mexico Water Resources Research Institute (WRRI) will manage and operate the Tularosa Basin National Inland Research and Testing Facility in Alamogordo. IEE/WRRI in partnership with General Electric (GE) and others will conduct applied research in technological issues related to inland desalination. The focus of the partnership will be on developing affordable and deployable technologies for sustainable water resources. The Institute for Energy and the Environment (IEE) and Water Resource Research Institute (WRRI) at New Mexico State University, one of the top ten minority serving institutions, are one of foremost authorities partnering with public and private entities, national laboratories, and governmental agencies. Through work with BOR, ONR, GE, and others, facilities such as the Brackish Groundwater National Desalination Research Facility (BGNDRF) is poised to become a national center of excellence under this partnership.

Item: Adaptive Threat Lab
Request: $5,000,000
Account: RDT&E, Army
Line: 18
PE: 0602620A
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: The purpose of the Adaptive Threat Lab for Improvised Explosive Devices Countermeasure Equipment is to continue research and development of IED-defeat systems, identify various manned and unmanned ground and airborne systems for deployment of these systems, and to develop an integrated sensor system for IED detection and defeat. The NMSU/PSL, ARL/SLAD, and GD team will explore the development of "smart" integrated IED detect/counter prototypes. A new threat emerged during Operation Iraqi Freedom that has taken very low technology devices and coupled them with large munitions, which has resulted in the one of the deadliest weapons against our troops. NMSU/PSL developed a device that can counter these emerging and adaptable threats and provide the technology to counter these IED threats. The goal of this academic, government, industry team is to field these miniature units on alternative manned and unmanned vehicles, both ground and airborne, to serve both as countermeasures and possibly detect systems. Further, the Army must be able to dynamically adapt to new and unexpected challenges on the battlefield. The ICE system can provide this flexibility.

Item: SafeZone Systems
Request: $2,000,000
Account: RDT&E, Army
Line: 48
PE: 0603710A
Suggested Recipient: Safe Zone Systems
Suggested Location: Albuquerque, NM
Purpose: The Safe Zone System is a low power radar which will save lives by providing early warning to our troops at guard posts and checkpoints of the approach of terrorists wearing explosives so that appropriate defensive actions can be taken at a safe distance. The Safe Zone System is portable and can be set-up within 10 minutes or can be utilized in more permanent installations since it can operate from

battery or standard electrical power. Extensive use of this Stand-off detection system to detect explosives on persons (suicide bombers) would save the lives of our troops and innocent people.

Item: Embedded Instrumentation for Army Vehicle Diagnostics and Prognostics
Request: $2,000,000
Account: RDT&E, Army
Line: 33
PE: 0603005A
Suggested Recipient: Management Sciences, Inc.
Suggested Location: Albuquerque, NM
Purpose: Fund low rate initial production (LRIP) with qualification testing and certification; and ramp production of approximately 1,000 Sentient Connector kits. The kits would be made for rapid insertion into Army Stryker tactical vehicles operating in GWOT OIF and OEF. Based on success in saving lives and vehicles, follow on funding from POM10 and POM 12 will produce Sentient Wiring kits for Abrams, Bradley, MRAP, HMMT (heavy support vehicles), HWWMV and other. Sentient kits will protect troops by performing real time in-situ diagnostics and prognostics of the health state of mission critical systems such as weapons, fuel, communications and power train. The kits issue accurate alerts to pre-empt dispatch of a seriously degraded vehicle which would likely result in a disabling "roadside" failure during a mission. A transition plan has been prepared by PEO Ground Combat Systems. Stryker vehicles are the initial platform. Other platforms such as Abrams, Bradley, LAV, MRAP and HWMMV should quickly follow.

Item Name: Deformable Mirror Project
Request: $2,000,000
Account: RDT&E, Defense-Wide
Line: 17
PE: 0602890F
Suggested Recipient: MZA Associates
Suggested Location: Albuquerque, NM
Purpose: This program would upgrade existing Deformable Mirrors (DM's) to determine whether new DM's can be built with hundreds of actuators in spaces of approximately 5 milimeters (mm) to take High Power in both Solid State Resonater and Beam Control Applications. This would allow for a diversified industrial base for DM manufacturing while improving the product for high power high energy laser applications. The Defense Science Board (DSB) has identified the need for additional domestic sources of DM's. Their 2007 report noted "the lack of directed energy production programs or the serious prospect of significant production programs has jeopardized the supporting industrial base. There is essentially one US vendor capable of supplying deformable mirrors." The DSB Report also notes: "The nation's technical capabilities in HEL (High Energy Laser) components and subsystems are thin and have in some cases, atrophied. The situation in large high-power optics and beam control is particularly fragile depending on a single vendor at best."

Item: New Mexico Test and Evaluation Alliance
Request: $3,500,000
Account: RDT&E, Defense-Wide
Line: 129
PE: 0604940D8Z
Suggested Recipient: ITT Advanced Engineering Services
Suggested Location: Albuquerque, NM
Purpose: This project would establish a test alliance consisting of four major test and evaluation (T&E) centers operating in the State of New Mexico to combine emerging test capabilities and resources into an alliance consortium to offer T&E support for short notice, inexpensive, rapid, near- and mid-term test and evaluation products, services and capabilities. Target customers would be DoD customers operating within existing bases in New Mexico who need remote T&E sites for various testing to include sensors

and communications system testing, RF testing, explosives testing and UAV/UAS testing. Funding would provide for establishment of the alliance consortium and allow for an inventory of T&E capabilities within the alliance, perform gap analyses, define roles and responsibilities, identify synergies, address shortfalls, write a marketing plan and develop a robust operational plan.

Item: Center of Excellence for Geospatial Situational Awareness
Request: $1,000,000
Account: Intelligence
Line: 195
PE: 0305102BQ
Suggested Recipient: New Mexico State University
Suggested Location: Las Cruces, NM
Purpose: The project will continue operations of the Center of Excellence for Geospatial Science in collaboration with the National Geospatial-Intelligence Agency (NGA). NGA provides intelligence analysis, maps, remote sensing of war zones, and geospatial analysis of Human Terrains for war fighters in Iraq, Afghanistan, and other locations. The Department of Geography, Department of Surveying Engineering, and Physical Science Laboratory (PSL) at NMSU are conducting this work. Continuing funding is requested to support NGA's workforce development goals in geospatial analysis and Intelligence studies. The project will deliver education, training, equipment, and student scholarships for those seeking careers with DoD, NGA, and in the Intelligence Community.

Item: Imaging System for Space Situational Awareness
Request: $3,500,000
Account: RDT&E, Air Force
Line: 24
PE: 0603270F
Suggested Recipient: Goodrich Corporation ISR Systems
Suggested Location: Albuquerque, NM
Purpose: Existing U.S. Space Situational Awareness (SSA) capabilities focus on surveillance and assume a fair degree of preexisting information. A catalog of all known objects in orbit, which is maintained by the U.S. Space Command, is updated on a recurring basis, depending on the object's orbit and characteristics. While this system has functioned very well to date, it faces many challenges as the space environment becomes increasingly more complex. Development of the proposed sensor systems would augment this existing system giving the Warfighter new tools by which he can perform these complex space based activities much more efficiently and automously.

Item: Tactical Air Sentinel
Request: $3,900,000
Account: RDT&E, Navy
Line: 153
PE: 0605873N
Suggested Recipient: ICx Mesosystems
Suggested Location: Albuquerque, NM
Purpose: Develops a mobile, deployable, lightweight, low power biological detector to detect releases of a variety of biological materials including anthrax, tularemia, viruses and toxins, giving field operating forces adequate sensors to detect a biological release in time to take preventative and mediating countermeasures. Tactical AirSentinel is rooted in proven technology developed with assistance from DARPA and DTRA. The Marine Corp contract included unfunded options in the contract to "harden" the design for use in the battlefield and implement quality plans associated with high-volume production of reagent cartridges. The technology will be used as a continuously-operating sensor designed to detect potentially harmful airborne biological agent releases and bio-threats.

Item: ACRM

Request: $3,800,000
Account: RDT&E, Air Force
Line: 25
PE: 0603401F
Suggested Recipient: Advatech Pacific, Inc.
Suggested Location: Albuquerque, NM
Purpose: Advanced Cost and Risk Model is life-cycle cost/risk modeling software that accurately characterizes program cost/risk and allows decision makers to understand the impacts of their mission, CONOPS, and design decisions in the very early phases of the program when knowledge-based decisions yield the highest life-cycle cost savings.

Item: GeoINT Data Access Prototype (GDAP)
Request: $2,000,000
Account: RDT&E, Defense-Wide
Line: 194
PE: 0305102BQ
Suggested Recipient: Radiant Blue
Suggested Location: Las Cruces, NM
Purpose: The GDAP will leverage existing high bandwidth network at the GIAT facility infrastructure. The system and processes developed will provide an operational foundation to use and incorporate the prototype's novel features within programs of record. GDAP will provide networked access to data stores on both classified and unclassified networks for pilot program's data users and its off-site development staff. The GDAP will leverage existing high bandwidth network and the NGA Geospatial Intelligence Advancement Testbed (GIAT) facility infrastructure at the primary development site. This prototyping effort will provide immediate benefits to a wide variety of new users via their existing tools and networks by making more data available to them faster and in standardized formats. The architectures, policies, and processes developed and evaluated under this effort will provide a foundation for future transition of the prototype to operational use and/or incorporation of the prototype's novel features within current and planned operational programs of record.

Item: National Consortium for MASINT Research
Request: $15,000,000
Account: RDT&E
Line: 4
PE: 03001301L
Suggested Recipient: Defense Intelligence Agency
Suggested Location: Albuquerque, NM
Purpose: The NCMR mission is "to push the technology horizon and bring new research concepts and capabilities to the entire MASINT community". It delivers rigorous peer reviewed research and supports efforts by its chartered members in over 20 states. The NCMR is also a source for new Technical Intelligence Professionals both in and out of government. By creating the NCMR undergraduate scholars program, juniors and seniors at participating universities are receiving merit/need based scholarships that bear fruit in their collective understanding of needs and interest in future intelligence sector employment. This program plays a critical role in the future of technical intelligence and in our nation's security.

Item: SkyPure – Water from Air
Request: $2,600,000
Account: RDT&E, Army
Line: 13
PE: 0602601A
Suggested Recipient: ICx Mesosystems
Suggested Location: Albuquerque, NM

Purpose: Develops a method to harvest drinking water from humidity in the air using waste heat from vehicle engines and electrical power generators. Getting potable water to deployed troops in Iraq and Afghanistan is a challenging and costly logistics problem. Having the capability to extract water from thin air will substantially reduce the logistical burden of providing potable water to deployed forces and can push drinking water generation to where it is needed most in military responses to natural disasters like the tsunami relief efforts in Indonesia. The project will allow renewable energy sources, such as solar technology, to be used for harvesting drinking water from ambient air.

Item: New Mexico Solar Research Center
Request: $1,000,000
Account: RDT&E, Air Force
Line: 12
PE: 0602601F
Suggested Recipient: Kirtland Partnership Committee
Suggested Location: Albuquerque, NM
Purpose: To provide laboratory revitalization efforts connected with the the Battlespace Environment Division that is being transferred to Kirtland Air Force Base. The New Mexico Solar Research Center will support basic and applied research on the sun and solar wind, and on processes in the upper atmosphere, ionosphere, and magnetosphere that threaten military, civil, and commercial space systems. Researchers will seek to identify/quantify basic physical principles controlling the space environment and apply study results to forecast solar storms and to mitigate environmental effects on space systems.

Item: Civil Air Patrol Operations and Maintenance
Request: $4,400,000
Account: Operations and Maintenance, Air Force
Line:
PE:
Suggested Recipient: Civil Air Patrol
Suggested Location: Albuquerque, NM
Purpose: This request would restore the CAP budget to the minimum baseline needed to conduct community, state and Federal missions. If not fully funded, the readiness to support disaster relief, community service missions, search and rescue, youth leadership development and homeland security initiatives will be significantly degraded. This will impact every state and CAP wing in the nation including New Mexico.

Item: Liquid Engine Low-Toxic Propellant (LELP)
Request: $2,500,000
Account: RDT&E, Air Force
Line: 10
PE: 0602203F
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: Advanced development of AF-M315E propellant would be accomplished by research experts at the University of New Mexico in collaboration with researchers at Aerojet's Redmond, Washington facility. Combining the expertise of the aerospace engineering and chemical analysis programs within the New Mexico university system with Aerojet's Redmond engineers will broaden and enhance this effort at a reduced cost. This partnership also builds in future workforce capabilities by providing students with real-life research efforts. Furthermore, the cross benefit of interaction between industry and academia will add to the intellectual capability of both from the close working relationships that will be established.

Item: New Mexico Space Environment Research Centers
Request: $1,200,000
Account: RDT&E, Air Force

Line: 12
PE: 0602601F
Suggested Recipient: University of New Mexico
Suggested Location: Albuquerque, NM
Purpose: To establish research clusters at three NM universities to provide research capability for and a steady flow of qualified job candidates to the Air Force Research Lab Battlespace Environment Division that is being transferred to Kirtland AFB, NM in 2011. The Battlespace Environment Division is the premier DOD unit for measuring, forecasting, and determining the impacts of the space environment on current and future generations of space systems. This project will help replace the more than 100 scientists and engineers the Division is expected to lose during the BRAC directed transfer.

Item: Tribal Colleges and Universities
Request: $3,300,000
Account: RDT&E, Defense-Wide
Line: 9
PE: 0602228D8Z
Suggested Recipient: N/A
Suggested Location: N/A
Purpose: To set-aside $3,300,000 within the Historically Black Colleges and Universities fund for the Minority Institutions Infrastructure Support Program. This competitive program provides tribal colleges and universities with funding to upgrade laboratory and computer equipment that might not otherwise be available to students and faculty. It is an essential tool in ensuring that tribal institutions are able to embark upon research and development with the most up-to-date technology available.

I certify that neither I nor my immediate family has a pecuniary interest in any of the congressionally directed spending items that I have requested, consistent with the requirements of paragraph 9 of Rule XLIV of the Standing Rules of the Senate. I further certify that I have posted a description of the items requested on my official website, along with the accompanying justification.

Sincerely,

Tom Udall
United States Senator